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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,637	03/07/2002	Lester David Michels	30895B/C1	1332

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EXAMINER	
MADSEN, ROBERT A	
ART UNIT	**PAPER NUMBER**
1761	

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/092,637	MICHELS ET AL.	
	Examiner	Art Unit	
	Robert Madsen	1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 31,2005 has been entered. Claims 1-15 remain pending in the application.

2. The rejection of claims 1-12 under 35 U.S.C. 103(a) as being unpatentable over Aoi et al. (US 565895) in view Gans et al. (US 4025650) and Furia and claims 13-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Gans et al. (US 4025650) in view of Aoi et al. (US 565895) have been withdrawn in favor of the new grounds of rejection set forth below.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoi et al. (US 565895) in view of the admission of the prior art and Gans et al. (US 4025650) and Banwart and Furia.

5. Regarding claims 1-9,11,12,Aoi et al. teach enteral complete solutions (i.e. administered in 1500-2000 kcal per day, which is a conventional diet kcal consumption) to prevent nutritional deficiency of cancer patients. The solution is combined with a feeding tube system, as recited in claim 11, has a pH of 3-8, 2-6.9 or greater than 5.5 as recited in claims 2-4, which may include esters of p-hydroxybenzoic acid (i.e. parabens), salts of benzoic acid, and salts of sorbic acid as recited in claim 1(Abstract, Column 3, lines 1-21, Column 4, lines 34-53,Column 5, lines 23-30, Column 6, lines 23-35). Aoi et al. however are silent in teaching the particular type or amount of parabens, salts of benzoic acid, and salts of sorbic acid, as recited in claims, 1,5-9, and 12.

6. The admission of the prior art teaches that enteral nutritional solutions are susceptible to microbial attack because of the proteins and starches found in the enteral nutritional solutions.

7. Gans et al. also teach compositions that prevent nutritional deficiency that comprise proteins and starches. Gans et al. teach using one or more preservatives from 0.4-1% such as potassium sorbate, sodium benzoate methyl paraben and propyl paraben, alone or in combination in a nutritional formula, as recited in claims 5,7, 9(Abstract, Column 3, lines 22-35, Column 4, line 20 to Column 5, line15). Gans et al. are also relied on evidence of the conventional dose of the preservatives. Gans et al. teach 0.12% of potassium sorbate and sodium benzoate, as well as 0.05% propyl paraben and 0.12% methyl paraben as recited in claims 1 and 8 (See Table 1, which teaches 0.4% preservatives, in light of the 15.5 lbs of total preservatives in Example 1).

8. Branwart is relied on as evidence of the conventional properties of the preservatives taught by Aoi et al. Banwart teaches sorbic acid/sorbates, although effective against bacteria, may not be effective at low sorbate/ high mold levels, benzoic/benzoate are effective against yeast and mold, and parabens have certain advantages over benzoic acid in that they are considered safer for human consumption, are more effective at higher pH levels, including neutral pH levels, and the methyl to butyl esters are effective against Gram negative and Gram positive bacteria, as well as fungi. Banwart further teaches potassium sorbate and sodium benzoate have a better solubility over sorbic and benzoic acid, respectively. Additionally Banwart teaches benzoates in combination with other preservatives are beneficial, and that sorbates in combination with benzoates are far more effective than the either used alone (Pages 393-395).

9. Furia is relied on as further evidence of the conventionality of using parabens in food formulations, using parabens as more effective preservatives against molds at neutral/high pH than sorbs and benzoic acid, the conventionality of using benzoates and parabens in combination to provide an cumulative antimicrobial effect , and the use of ethyl paraben, as recited in claim 6, in certain countries (Page 126 and 127 See Regulatory Use and Applications, Page 124 Table 3).

10. Therefore, it would have been obvious to modify Aoi et al. and include either 0.1-0.2% methyl paraben or 0.05-1.0% propyl paraben, 0.1-0.2% sodium benzoate and 0.1-0.2% potassium sorbate, as recited in claims 1,5,7-9,12 since (1) Aoi et al. teach preservatives include parabens and salts of both sorbic acid and benzoic acid, (2) the

admission of the prior art teaches proteins and starches present in the enteral solution cause the solution to be susceptible to microbial attack and Gans et al. teach 0.12% of potassium sorbate, 0.12% of sodium benzoate, 0.05% propyl paraben , and 0.12% methyl paraben are effective at preserving nutritional solutions containing proteins and starches, and (3) Branwart teaches benzoates and sorbates are more soluble than their corresponding acids and the antimicrobial effect of the two in combination is cumulative and (4) Furia teaches the anti microbial effect of benzoates and parabens is also cumulative. Thus, the art taken as a whole recognizes the benzoates, sorbates, and parabens disclosed by Aoi et al. when used in combination at the recited levels are effective at preserving nutritional solutions comprising proteins and starches and provide a cumulative antimicrobial effect to better protect against a variety of microorganisms under a variety of conditions.

11. To further include ethyl paraben, as recited in claim 6, would also have been an obvious depending of the particular regulatory status of the area in which the enteral solution is used, since Furia teach ethyl paraben is approved in some countries, while not approved in others.

12. Regarding claim 10, Aoi et al. teach xanthan gum and carageenan are suitable stabilizers for the solution (Column 4, lines 48-50), but Aoi et al. are silent in teaching a particular quantity. Aoi et al. teach the solution is for use in combination with a feed tube, and it is notoriously well known in the art that xanthan gum and carageenan contribute to a solution's viscosity. Therefore, to select any particular quantity of xanthan gum and carageenan would have been obvious, depending on the desired

solution viscosity since the solution of Aoi et al. is to be used with a tube system and the viscosity would affect the flowability of the solution through the tube (e.g., the greater the viscosity of the enteral solution the less easily it would flow through a feed tube).

13. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoi et al. (US 565895) in view of the admission of the prior art and Gans et al. (US 4025650) and Banwart and Furia.

14. Regarding claims 13-15, Aoi et al. teach a method of preserving enteral complete solutions (i.e. administered in 1500-2000 kcal per day, which is a conventional diet kcal consumption) having a pH of 3-8 as recited in claim 15, using parabens, salts of benzoic acid, and salts of sorbic acid (Abstract, Column 3, lines 1-21, Column 4, lines 34-53,Column 5, lines 23-30, Column 6, lines 23-35). However, Aoi is silent in specifically teaching 0.05-1.0% methyl or propyl paraben as recited in claim 14, 0.1-0.2% sodium or potassium benzoate as recited in claim 15,and 0.1-0.2%sodium or potassium sorbate as recited in claim 15 in combination and that the preservatives selected inhibit the growth of *Aspergillus niger, Candida albicans, Enterobacter cloacae, Staphylococcus aureus, and lactobacillus delbruekii.*

15. The admission of the prior art teaches that enteral nutritional solutions are susceptible to microbial attack because of the proteins and starches found in the enteral nutritional solutions.

16. Gans et al. also teach a method of preserving nutrient diet solutions, and presumably would inhibit the growth of a fungus, a Gram negative or Gram-positive bacteria as recited since that is the purpose of "preserving". Gans et al. teach adding 0.12% of both potassium sorbate and sodium benzoate, as well as 0.05% propyl paraben and 0.12% methyl paraben to *preserve* the composition, in an acidic pH, that is less than 7, which is included in the range of pH taught by Aoi et al. (See Table 1, which teaches 0.4% preservatives, in light of the 15.5 lbs of total preservatives in Example 1, Column 3, lines 22-35, Column 4, line 20 to Column 5, line15).

17. Branwart is relied on as evidence of the conventional properties of the preservatives taught by Aoi et al. Banwart teaches sorbic acid/sorbates, although effective against bacteria, may not be effective at low sorbate/ high mold levels, benzoic/benzoate are effective against yeast and mold, and parabens have certain advantages over benzoic acid in that they are considered safer for human consumption, are more effective at higher pH levels, including neutral pH levels, and the methyl to butyl esters are effective against Gram negative and Gram positive bacteria, as well as fungi. Banwart further teaches potassium sorbate and sodium benzoate have a better solubility over sorbic and benzoic acid, respectively. Additionally Banwart teaches benzoates in combination with other preservatives are beneficial, and that sorbates in combination with benzoates are far more effective than the either used alone (Pages 393-395).

18. Furia is relied on as further evidence of the conventionality of using parabens in food formulations, using parabens as more effective preservatives against molds at

neutral/high pH than sorbs and benzoic acid, and the conventionality of using benzoates and parabens in combination to provide an cumulative antimicrobial effect (Page 126 and 127 See Regulatory Use and Applications, Page 124 Table 3).

19. Therefore, it would have been obvious to modify Aoi et al. and select 0.12% of both potassium sorbate and sodium benzoate, as well as 0.05% propyl paraben and 0.12% methyl paraben as recited in claims 13 and 15 as the preservative system, since (1) Aoi et al. teach sorbates, benzoates, and parabens are suitable preservatives for the enteral complete nutritional solution, (2) the admission of the prior art disclosed the enteral nutritional solutions are susceptible to microbial attack (i.e. in need of preservation) because of presence of proteins and starches in the solution and Gans et al. teach 0.12% of both potassium sorbate and sodium benzoate, as well as 0.05% propyl paraben and 0.12% methyl paraben will preserve a nutritional solution comprising proteins and starches, (3) Branwart teaches benzoates and sorbates are more soluble than their corresponding acids and the antimicrobial effect of the two in combination is cumulative and (4) Furia teaches the anti microbial effect of benzoates and parabens is also cumulative. Thus, the art taken as a whole recognize the benzoates, sorbates, and parabens disclosed by Aoi et al. when used in combination at the recited levels are effective at preserving nutritional solutions comprising proteins and starches and provide a cumulative antimicrobial effect to better protect against a variety of microorganisms under a variety of conditions.

20. It would have been further obvious to select the preservatives suggested by Aoi et al. such that one would inhibit the growth of *Aspergillus niger, Candida albicans,*

Enterobacter cloacae, Staphylococcus aureus, and lactobacillus delbruekii , since (1) Gans et al. teach the recited combination of 0.12% of both potassium sorbate and sodium benzoate, 0.05% propyl paraben and 0.12% methyl paraben will "preserve" (i.e. inhibit any microbial growth)a solution comprising proteins and starches, which make the enteral solution susceptible to microbial attack as stated in the admission of the prior art, and (2) Branwart teaches benzoates are effective against yeast and molds, sorbates are effective against bacteria and mold, may not be effective at low sorbate/ high mold levels, and parabens are effective at higher pH levels, including neutral pH levels of Aoi et al., with the methyl to butyl esters being effective against Gram negative and Gram positive bacteria, as well as fungi, wherein the effects of benzoates and sorbates in combination have a cumulative effect and (3) Furia teaches benzoates and parabens have a cumulative effect.

Response to Arguments

21. Applicant's arguments, filed January 31,2005 with respect to the rejection(s)of claims 1-12 under 35 U.S.C. 103(a) as being unpatentable over Aoi et al. (US 565895) in view Gans et al. (US 4025650) and Furia and claims 13-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Gans et al. (US 4025650) in view of Aoi et al. (US 565895) have been fully considered. Although the rejections have been withdrawn and new grounds of rejection have been made, the arguments are still considered pertinent to the new grounds of rejection and are addressed below.

22. Applicant argues that there is no suggestion to combine Aoi et al. and Gans et al. because Aoi et al. teach a complete nutritional solution and Gans et al. teach a nutritional solution without fat. Applicant asserts that there is no teaching to suggest that the same quantities of preservatives used by Gans et al. would work with the addition of fats in Aoi et al. since Gans et al. teach a non-fat solution. Applicant further argues that the presence of fat in Aoi et al. may adversely impact the performance of the preservatives and result in undesirable by-products.

23. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Aoi et al. teach an enteral complete nutritional solution that may be preserved with parabens, benzoates, and sorbates, among other preservatives, but fails to suggest the particular type or amount of parabens, benzoates, and sorbates. Gans et al. also teach a nutritional solution. Gans et al. teach utilizing the same preservatives suggested by Aoi et al., optionally in combination, of anywhere from 0.4-1% of the formula. In a particular patient study Gans et al. include 0.12% of potassium sorbate, 0.12% of sodium benzoate, 0.05% propyl paraben , and 0.12% methyl paraben in the formula. As disclosed by applicant in the admission of the prior art, the microbial problems found with enteral compositions result from proteins and starches. Thus, there is an expectation of success in following

the teachings of Gans et al., since it was well known that proteins and starches in the enteral solution affect the microbial stability, Gans et al. teach the same preservatives broadly suggested by Aoi et al. are effective in a specific combination for preserving a nutritional solution containing proteins and starches. Regarding any interaction with fat, one of ordinary skill in the art would presume that the preservative composition of Gans et al. would be compatible with the fat-containing solution of Aoi et al. since Aoi et al. teach the same preservatives. There is no evidence of record that would suggest that fats adversely impact the performance of potassium sorbate, sodium benzoate, propyl paraben , and methyl paraben in a nutritional solution such that a preservative system fails or that undesirable by-products are formed.

24. With respect to Furia, Applicant argues that Furia fails to teach both salts in combination with parabens in a nutritionally complete feeding solution, while Applicant has found that parabens in combination with benzoate and sorbate have a synergism resulting in a greater inhibitory affect. Furia is not relied on for teaching nutritionally complete feeding solution, but further evidence of the conventional level of the particular parabens suggested by Gans et al., as well as the cumulative effect of adding parabens with benzoates. In response to Applicant's statement that Applicant has found a synergistic effect of the parabens/sorbate/benzoate, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Aoi suggests all three preservatives are useful for enteral solutions, while Gans

teaches the combination of parabens/sorbate/benzoate as an effective preservative for protein/carbohydrate containing nutritional solutions. It is noted that Furia does recognize the synergistic effect of paraben and benzoates.

25. Applicant further argues that Furia does not recognize the problem solved: extending the life an enteral feeding tube. It is noted that the problem solved by Applicant (i.e. extending the life of an enteral feeding tube) is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, the fact that applicant has recognized another advantage of the preservative compositions suggested by the combination of Aoi et al, Furia, and Gans et al. which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Madsen whose telephone number is (571) 272-1402. The examiner can normally be reached on 7:00AM-3:30PM M-F.

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert Madsen
Examiner
Art Unit 1761

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